

DISCUSSION OF THE CLAIMS

Claims 1, 3-12, 14-22, 24-28, 30-38, 40 and 46-58 are active in the present application. Claims 2, 13, 23, 29 and 41-45 are canceled claims. Claims 53-58 are new claims. Claim 53 is a new independent claim. Support for new independent Claim 53 is found in previously presented Claim 1 and in the examples. Support for new dependent Claims 54-58 is found in the previously presented dependent claims.

No new matter is added.

REMARKS

It is a requirement of present independent Claims 1 and 53 that the material of the sheetlike flexible substrate recited in the present claims have a porosity of more than 50%. Porosity is defined in paragraph [0022] of the PG publication corresponding to the present application (i.e., U.S. 2005/0070193).

Although the Office acknowledges that the art of record does not disclose this feature of the presently claimed invention (see paragraph no. 17 on page 13 of the June 29, 2009 Office Action), the Office nonetheless asserts that such a porosity would have been obvious to one of ordinary skill in the art. As support, the Office asserts that the cited art discloses that the porosity of the material can be controlled. Applicants traverse the Office's assertion of obviousness for the reason that the cited art nowhere discloses or suggests a material or membrane having a porosity of greater than 50% as presently claimed.

Penth (U.S. 6,309,545) does not disclose or suggest a membrane or substrate membrane/material having a porosity of greater than 50%. In fact, the porosity described in Penth relates to ceramic materials (see column 1, lines 19-21 of Penth). At best Penth discloses the following with respect to pore size and/or pore size distribution:

The particle size used in combination with the gap size of the carrier material used allows the pore size and/or the pore size distribution to be easily adjusted in the composite so that special membranes can be produced for special applications.

See column 2, lines 16-22 of Penth.

The above-quoted text of Penth is not a suggestion or disclosure that a substrate material (e.g., a woven or nonwoven textile) can have a porosity of 50% or greater. The art of record does not include any disclosure or suggestion that such a porosity is a result effective variable of any prior art article.

In fact, the examples of Penth make it clear that the Penth publication does not contemplate any substrate material having a porosity of 50% or greater. For example,

Example 2.1 of Penth describes a square mesh having “a mesh size of 90 micron” and a pore width of “0.2 to 0.4 micron.” Applicants submit that it is readily evident that when a mesh has a mesh size of 90 micron and a pore width of less than 1 micron, it is not possible for the resultant micro-filtration membrane to have a porosity of greater than 50%. In fact, the porosity must necessarily be substantially less than 50% because the mesh size (e.g., fiber size) is so much larger and takes up so much more volume in comparison to the pores which have a pore width of less than 1 micron.

Applicants thus submit that the rejection of Claim 1 as obvious over the cited art should be withdrawn at least for the reason that the cited art fails to disclose or suggest the porosity requirement recited in the present claims.

Applicants draw the Office’s attention to new independent Claim 53. New independent Claim 53 is drawn to a membrane comprising a substrate having a porous coating. The coating consists of “a homogenous mixture of an adhesion promoter and one or more inorganic oxide components.” The adhesion promoter likewise “consists of a mixture of tetramethoxysilane, methytrimethoxysilane and at least one of a glycidyloxy-functionalized silane and a methacryloyloxy-functionalized silane.”

Applicants submit that it is readily recognized that the transitional phrase “consists of” has a special meaning in patent law. Because the coating of Claim 53 consists of those material explicitly recited in the claim, other components not recited in the claim are excluded from the adhesion promoter.

Applicants therefore submit that new independent Claim 53 is further patentable over the cited art. For example, the coating of new independent Claim 53 is one that includes only the adhesion promoter and the inorganic component. Other materials such as thermoplastic reinforcing agents and the like are excluded from the coating recited in independent Claim 53. Moreover, because the adhesion promoter consists of those materials recited in the claim,

i.e., tetraethoxysilane, methyltrimethoxysilane and at least one of a glycidyloxy-functionalized silane and a methacryloyloxy-functionalized silane, any coatings of the cited art which include adhesion promoters containing one or more components not recited in Claim 53 are expressly excluded from the claimed invention.

Because the invention of Claim 53 includes a coating that is exclusive of the coatings of the cited art, there can be no overlap of the cited art with the invention of Claim 53. For this reason, among others, new independent Claim 53 is novel and not obvious over the cited art.

Applicants thus respectfully request allowance of new independent Claim 53.

OBVIOUSNESS-TYPE DOUBLE PATENTING

In the alternate to rejecting the previously presented claims as obvious under the meaning 35 U.S.C. § 103(a), the Office rejected the claims for obviousness-type double patenting in view of co-pending Application Nos. 10/504,144; 10/524,143; 10/524,669; 10/519,097; 10/575,268; 10/575,759 and 10/575,734. Each of the aforementioned co-pending applications is cited in combination with Penth and/or Bishop (U.S. 5,639,555).

As noted above, Applicants traverse the rejection of the previously presented claims as obvious over Penth and/or Bishop for the reason that the cited art fails to disclose a substrate having a porosity of 50% or greater. Given that Penth and Bishop fail to disclose this feature of the presently claimed invention, the Office's reliance on Penth and Bishop in combination with the co-pending applications is not supportable and the rejections for obviousness-type double patenting should be withdrawn.

With respect to new independent Claim 53, as discussed in detail above, the subject matter of Claim 53 is exclusive of the compositions and/or substrates described in Penth and Bishop. Further still, the substrates and/or materials of the co-pending applications may

include one or more components excluded by the “consisting of” transitional phrases included in new independent Claim 53 thus excluding such compositions and/or articles from the claimed invention.

Applicants thus submit that the subject matter of new independent Claim 53 should be immune to any rejection for obviousness-type double patenting in view of the co-pending applications cited by the Office.

35 U.S.C. § 112

The Office rejected Claim 52 as failing to comply with the written description requirement. The Office is of the opinion that the original specification fails to convey to one of ordinary skill in the art that the inventors has possession of an invention in which the only adhesion promoter present on the surface of a non-woven polymeric fiber is one that includes at least one of a glycidyl- functionalized silane and a methacryloyl- functionalized silane.

Applicants submit that the rejection should be withdrawn because the examples of the present specification describe such a membrane. In fact, the examples describe the preparation of membranes in which a combination of an adhesion promoter (i.e., the adhesion promoter recited in Claim 1) and an inorganic oxide is applied only to a nonwoven polymeric fiber. Applicants submit that those of ordinary skill in the art would readily recognize that the invention described in Claim 52 is the invention described in the examples of the original specification.

Applicants thus submit that the rejection should be withdrawn.

For the reasons discussed above in detail, Applicants submit that all now-pending claims are in condition for allowance. Applicants request the mailing of a Notice of Allowance acknowledging the patentability of the presently claimed subject matter.

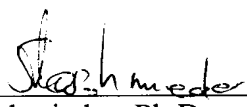
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